A. Mehta

1638

RAW SEQUENCE LISTING   DATE: 01/14/2002
PATENT APPLICATION: US/09/645,337   TIME: 15:18:06

Input Set : A:\104701.01 Sequence Listing.txt
Output Set: N:\CRF3\01112002\I645337.raw

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 5 <110> APPLICANT: Wu Dr., Keqiang
 7         Miki Dr., Brian L
 9         Tian Dr., Lining
11         Brown Dr., Dan
14 <120> TITLE OF INVENTION: Repressing Gene Expression in Plants
17 <130> FILE REFERENCE: 104107.01
20 <140> CURRENT APPLICATION NUMBER: 09/645,337
22 <141> CURRENT FILING DATE: 2000-08-25
26 <150> PRIOR APPLICATION NUMBER: US 09/383,971
28 <151> PRIOR FILING DATE: 1999-08-27
32 <160> NUMBER OF SEQ ID NOS: 11
36 <170> SOFTWARE: PatentIn Ver. 2.0
40 <210> SEQ ID NO: 1
42 <211> LENGTH: 1807
44 <212> TYPE: DNA
46 <213> ORGANISM: Arabidopsis thaliana
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54 agagatcatc gcagcttctc ctccgaccat ttgactgcga ctgtgattac aacacaccgt 120
56 tgatcctacg aaaaagaggt aatggatact ggcggcaatt cgctggcgtc cggacctgat 180
58 ggtgtgaaga ggaaagtttg ttatttctat gaccctgagg tcggcaatta ctactatggc 240
60 caaggtcatc ccatgaagcc ccatcgcatc cgcatgaccc atgccctcct cgctcactac 300
62 ggtctccttc agcatatgca ggttctcaag cccttccctg cccgcgaacg tgatctctgc 360
64 cgcttccacg ccgacgacta tgtctctttt ctccgcagca ttacccctga aacccagcaa 420
66 gatcagattc gccaacttaa gcgcttcaat gttggtgaag actgtcccgt ctttgacggc 480
68 ctttattcct tttgccagac ctatgctgga ggatctgttg gtggctctgt caagcttaac 540
70 cacggcctct gcgatattgc catcaactgg gctggtggtc tccatcacgc taagaagtgc 600
72 gaggcctctg gcttctgtta cgtcaatgat atcgtcttag ctatcctaga gctccttaag 660
74 cagcatgagc gtgttcttta tgtcgatatt gatatccacc acgggggatgg agtggaggag 720
76 gcattttatg ctactgacag ggttatgact gtctcgtttc ataaatttgg tgattacttt 780
78 cccggtacag gtcacattca ggatataggt tatggtagcg gaaagtacta ttctctcaat 840
80 gtaccactgg atgatggaat cgatgatgag agctatcatc tgttattcaa gcccatcatg 900
82 gggaaagtta tggaaatttt ccgaccaggg gctgtggtat tgcaatgtgg tgctgactcc 960
84 ctatctgggg atcggttagg ttgcttcaat ctttcaatca aaggtcatgc tgagtgcgtc 1020
86 aaatttatga gatcgttcaa tgttcccctg ctgctcttgg gtggtggtgg ttacactatc 1080
88 cgcaatgttg cccgttgctg gtgctacgag actggagttg cacttggagt tgaagttgaa 1140
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92 gctccaagta acatggaaaa taagaattct cgtcagatgc ttgaagagat tcgcaatgac 1260
94 cttctccaca atctctctaa gcttcagcat gctccaagtg taccatttca ggaaagacca 1320
96 cctgatacag agactcccga ggttgatgaa gaccaagaag atgggggataa aagatgggat 1380
98 ccggattcag acatggatgt tgatgatgac cgtaaaccta taccaagcag agtaaaaaga 1440
100 gaagctgttg aaccagatac aaaggacaag gatggactga aaggaattat ggagcgtgga 1500
102 aaaggttgtg aggtggaggt ggatgagagt ggaagcacta aggttacagg agtaaaccca 1560
104 gtgggagtgg aggaagcaag tgtgaaaatg gaagaggaag aacaaacaa gggtggggcg 1620
106 gagcaggcgt ttcctcctaa aacataagac tcggagcttc taatttcttg ctactttttc 1680
108 tgtctatcaa atgttgctag ttaagtttct ggagttgttg ttgttgtaag cactcctctg 1740
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122 <213> ORGANISM: Arabidopsis thaliana
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134 Arg Lys Val Cys Tyr Phe Tyr Asp Pro Glu Val Gly Asn Tyr Tyr Tyr
136              20                  25                  30
140 Gly Gln Gly His Pro Met Lys Pro His Arg Ile Arg Met Thr His Ala
142          35                  40                  45
146 Leu Leu Ala His Tyr Gly Leu Leu Gln His Met Gln Val Leu Lys Pro
148       50                  55                  60
152 Phe Pro Ala Arg Glu Arg Asp Leu Cys Arg Phe His Ala Asp Asp Tyr
154  65                  70                  75                  80
158 Val Ser Phe Leu Arg Ser Ile Thr Pro Glu Thr Gln Gln Asp Gln Ile
160                  85                  90                  95
164 Arg Gln Leu Lys Arg Phe Asn Val Gly Glu Asp Cys Pro Val Phe Asp
166              100                 105                 110
170 Gly Leu Tyr Ser Phe Cys Gln Thr Tyr Ala Gly Gly Ser Val Gly Gly
172          115                 120                 125
176 Ser Val Lys Leu Asn His Gly Leu Cys Asp Ile Ala Ile Asn Trp Ala
178       130                 135                 140
182 Gly Gly Leu His His Ala Lys Lys Cys Glu Ala Ser Gly Phe Cys Tyr
184 145                 150                 155                 160
188 Val Asn Asp Ile Val Leu Ala Ile Leu Glu Leu Leu Lys Gln His Glu
190                 165                 170                 175
194 Arg Val Leu Tyr Val Asp Ile Asp Ile His His Gly Asp Gly Val Glu
196              180                 185                 190
200 Glu Ala Phe Tyr Ala Thr Asp Arg Val Met Thr Val Ser Phe His Lys
202          195                 200                 205
206 Phe Gly Asp Tyr Phe Pro Gly Thr Gly His Ile Gln Asp Ile Gly Tyr
208       210                 215                 220
212 Gly Ser Gly Lys Tyr Tyr Ser Leu Asn Val Pro Leu Asp Asp Gly Ile
214 225                 230                 235                 240
218 Asp Asp Glu Ser Tyr His Leu Leu Phe Lys Pro Ile Met Gly Lys Val
220              245                 250                 255
224 Met Glu Ile Phe Arg Pro Gly Ala Val Val Leu Gln Cys Gly Ala Asp
226              260                 265                 270
230 Ser Leu Ser Gly Asp Arg Leu Gly Cys Phe Asn Leu Ser Ile Lys Gly
232          275                 280                 285
236 His Ala Glu Cys Val Lys Phe Met Arg Ser Phe Asn Val Pro Leu Leu
238       290                 295                 300
242 Leu Leu Gly Gly Gly Gly Tyr Thr Ile Arg Asn Val Ala Arg Cys Trp
244 305                 310                 315                 320
248 Cys Tyr Glu Thr Gly Val Ala Leu Gly Val Glu Val Glu Asp Lys Met
250              325                 330                 335
254 Pro Glu His Glu Tyr Tyr Glu Tyr Phe Gly Pro Asp Tyr Thr Leu His
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RAW SEQUENCE LISTING   DATE: 01/14/2002
PATENT APPLICATION: US/09/645,337   TIME: 15:18:06

Input Set : A:\104701.01 Sequence Listing.txt
Output Set: N:\CRF3\01112002\I645337.raw

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260 Val Ala Pro Ser Asn Met Glu Asn Lys Asn Ser Arg Gln Met Leu Glu
262          355                    360                    365
266 Glu Ile Arg Asn Asp Leu Leu His Asn Leu Ser Lys Leu Gln His Ala
268      370                    375                    380
272 Pro Ser Val Pro Phe Gln Glu Arg Pro Pro Asp Thr Glu Thr Pro Glu
274 385                    390                    395                    400
278 Val Asp Glu Asp Gln Glu Asp Gly Asp Lys Arg Trp Asp Pro Asp Ser
280                405                    410                    415
284 Asp Met Asp Val Asp Asp Asp Arg Lys Pro Ile Pro Ser Arg Val Lys
286          420                    425                    430
290 Arg Glu Ala Val Glu Pro Asp Thr Lys Asp Lys Asp Gly Leu Lys Gly
292          435                    440                    445
296 Ile Met Glu Arg Gly Lys Gly Cys Glu Val Glu Val Asp Glu Ser Gly
298      450                    455                    460
302 Ser Thr Lys Val Thr Gly Val Asn Pro Val Gly Val Glu Glu Ala Ser
304 465                    470                    475                    480
308 Val Lys Met Glu Glu Glu Gly Thr Asn Lys Gly Gly Ala Glu Gln Ala
310                485                    490                    495
314 Phe Pro Pro Lys Thr
316                500
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324 <211> LENGTH: 1800
326 <212> TYPE: DNA
328 <213> ORGANISM: Arabidopsis thaliana
332 <220> FEATURE:
334 <221> NAME/KEY: misc_feature
336 <222> LOCATION: (1374)
338 <223> OTHER INFORMATION: a or g or c or t/u
342 <400> SEQUENCE: 3
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346 taaaacttgg gaatagagag agactctgag tgagagagag attctgagtg agagacggag 120
348 atggaggcag acgaaagcgg catctctctg ccgtcgggac ccgacggacg taagcggcga 180
350 gtcagttact tctacgagcc gacgatcgga gactactact acggtcaagg ccacccgatg 240
352 aagcctcacc ggatccgtat ggctcatagc ctaatcattc actatcacct ccaccgtcgc 300
354 ttagaaatca gtcgccctag cctcgctgac gcctccgata tcggccgatt ccattcgccg 360
356 gagtatgttg acttcctcgc ttccgtttcg ccggaatcta tgggcgatcc ttccgctgca 420
358 cgaaacctaa ggcgattcaa tgtcggtgag gattgtcctg tcttcgacgg acttttttgat 480
360 ttttgccgtg cttccgccgg aggttctatt ggtgctgccg tcaaattaaa cagacaggac 540
362 gctgatatcg ctatcaattg gggcggtggg cttcaccatg ctaagaaaag cgaggcttct 600
364 gggtttttgct atgtaaacga catcgtgcta gggattctgg agttgctcaa gatgtttaag 660
366 cgggttctct acatagatat tgatgtccac catggagatg gagtggaaga agcgtttttac 720
368 accactgata gagttatgac tgtttctttc cacaaatttg gggacttttt cccaggaact 780
370 ggtcacataa gagatgttgg cgctgaaaaa gggaaatact atgctctaaa tgttccacta 840
372 aacgatggta tggacgatga aagtttccgc agcttgttta gacctcttat ccagaaggtt 900
374 atggaagtgt atcagccaga ggcagttgtt cttcagtgtg gtgctgactc cttaagtggt 960
376 gatcggttgg gttgcttcaa cttatcagtc aagggtcacg ctgattgcct tcggttctta 1020
378 agatcttaca acgttcctct catggtgttg ggtggtgaag ggtatactat tcgaaatgtt 1080
380 gcccgttgct ggtgttatga gactgcagtt gctgttggag tagagccgga caacaaactc 1140
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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/645,337

DATE: 01/14/2002
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Input Set : A:\104701.01 Sequence Listing.txt
Output Set: N:\CRF3\01112002\I645337.raw

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      382 ccttacaatg agtattttga gtatttcggc ccagattata cgcttcatgt cgacccaagt 1200
      384 cctatggaga atttaaacac gcccaaagat atggagagga taaggaacac gttgctggaa 1260
      386 caactttcgg gactaataca cgcacctagc gtccagtttc agcacacacc accagtcaat 1320
W--> 388 cgagttttgg acgagccgga agatgacatg gagacaagac caaaacctcg catntggagt 1380
      390 ggaactgcga cttatgaatc agacagtgac gatgatgata aacctcttca tggttactca 1440
      392 tgtcgtggtg gcgcaactac ggacagggac tctaccggtg aagatgaaat ggatgacgat 1500
      394 aacccagagc cagacgtgaa tcctccatcg tcttaaacca gcttgatggt ttggtgtctc 1560
      396 ttttgccata tgataatgtc ggcagattta agaaacaagt tagggaatg aatgattctt 1620
      398 tgatgttttt tcagcaacct tttgagttct gtgaaaacgc tgcattgatt agaacagtga 1680
      400 caactgacta gtattttggc ccaagttaga aaatcagaat atgtgaaaaa aaaaaaaaaa 1740
      402 aaaaaaaagg gcggccgctc tagaggatcc aagcttacgt acgcgtgcat gcgacgtcat 1800
      406 <210> SEQ ID NO: 4
      408 <211> LENGTH: 471
      410 <212> TYPE: PRT
      412 <213> ORGANISM: Arabidopsis thaliana
      416 <220> FEATURE:
      418 <221> NAME/KEY: UNSURE
      420 <222> LOCATION: (418)
      422 <223> OTHER INFORMATION: unknown or other
      426 <400> SEQUENCE: 4
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      436              20                  25                  30
      440 Tyr Tyr Gly Gln Gly His Pro Met Lys Pro His Arg Ile Arg Met Ala
      442          35                  40                  45
      446 His Ser Leu Ile Ile His Tyr His Leu His Arg Arg Leu Glu Ile Ser
      448          50                  55                  60
      452 Arg Pro Ser Leu Ala Asp Ala Ser Asp Ile Gly Arg Phe His Ser Pro
      454 65                  70                  75                  80
      458 Glu Tyr Val Asp Phe Leu Ala Ser Val Ser Pro Glu Ser Met Gly Asp
      460              85                  90                  95
      464 Pro Ser Ala Ala Arg Asn Leu Arg Arg Phe Asn Val Gly Glu Asp Cys
      466              100                 105                 110
      470 Pro Val Phe Asp Gly Leu Phe Asp Phe Cys Arg Ala Ser Ala Gly Gly
      472          115                 120                 125
      476 Ser Ile Gly Ala Ala Val Lys Leu Asn Arg Gln Asp Ala Asp Ile Ala
      478          130                 135                 140
      482 Ile Asn Trp Gly Gly Gly Leu His His Ala Lys Lys Ser Glu Ala Ser
      484 145                 150                 155                 160
      488 Gly Phe Cys Tyr Val Asn Asp Ile Val Leu Gly Ile Leu Glu Leu Leu
      490              165                 170                 175
      494 Lys Met Phe Lys Arg Val Leu Tyr Ile Asp Ile Asp Val His His Gly
      496              180                 185                 190
      500 Asp Gly Val Glu Glu Ala Phe Tyr Thr Thr Asp Arg Val Met Thr Val
      502          195                 200                 205
      506 Ser Phe His Lys Phe Gly Asp Phe Phe Pro Gly Thr Gly His Ile Arg
      508          210                 215                 220
      512 Asp Val Gly Ala Glu Lys Gly Lys Tyr Tyr Ala Leu Asn Val Pro Leu
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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/645,337

DATE: 01/14/2002
TIME: 15:18:06

Input Set : A:\104701.01 Sequence Listing.txt
Output Set: N:\CRF3\01112002\I645337.raw

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514 225                    230                    235                    240
518 Asn Asp Gly Met Asp Asp Glu Ser Phe Arg Ser Leu Phe Arg Pro Leu
520                    245                    250                    255
524 Ile Gln Lys Val Met Glu Val Tyr Gln Pro Glu Ala Val Val Leu Gln
526                    260                    265                    270
530 Cys Gly Ala Asp Ser Leu Ser Gly Asp Arg Leu Gly Cys Phe Asn Leu
532                    275                    280                    285
536 Ser Val Lys Gly His Ala Asp Cys Leu Arg Phe Leu Arg Ser Tyr Asn
538                    290                    295                    300
542 Val Pro Leu Met Val Leu Gly Gly Glu Gly Tyr Thr Ile Arg Asn Val
544 305                    310                    315                    320
548 Ala Arg Cys Trp Cys Tyr Glu Thr Ala Val Ala Val Gly Val Glu Pro
550                    325                    330                    335
554 Asp Asn Lys Leu Pro Tyr Asn Glu Tyr Phe Glu Tyr Phe Gly Pro Asp
556                    340                    345                    350
560 Tyr Thr Leu His Val Asp Pro Ser Pro Met Glu Asn Leu Asn Thr Pro
562                    355                    360                    365
566 Lys Asp Met Glu Arg Ile Arg Asn Thr Leu Leu Glu Gln Leu Ser Gly
568        370                    375                    380
572 Leu Ile His Ala Pro Ser Val Gln Phe Gln His Thr Pro Pro Val Asn
574 385                    390                    395                    400
578 Arg Val Leu Asp Glu Pro Glu Asp Asp Met Glu Thr Arg Pro Lys Pro
580                    405                    410                    415
```
W--> `584 Arg Xaa Trp Ser Gly Thr Ala Thr Tyr Glu Ser Asp Ser Asp Asp Asp`
```
586                    420                    425                    430
590 Asp Lys Pro Leu His Gly Tyr Ser Cys Arg Gly Gly Ala Thr Thr Asp
592        435                    440                    445
596 Arg Asp Ser Thr Gly Glu Asp Glu Met Asp Asp Asp Asn Pro Glu Pro
598        450                    455                    460
602 Asp Val Asn Pro Pro Ser Ser
604 465                    470
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612 <211> LENGTH: 939
614 <212> TYPE: DNA
616 <213> ORGANISM: Arabidopsis thaliana
620 <400> SEQUENCE: 5
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626 cacgtttctc aggcatcgct tggagaatgt aaaaacaaga agggagagtt tgtgcctta 180
628 catgtaaagg ttgggaacca gaacttggtt ctgggaactc tatcgactga gaacatccct 240
630 cagcttttct gtgatttggt attcgacaag gagtttgagc tttctcacac ttggggaaaa 300
632 ggaagtgttt actttgttgg atacaaaact cccaacattg agccacaagg ctattctgag 360
634 gaagaagagg aagaagagga agaagttcct gctgggaatg ctgccaaggc tgtagctaaa 420
636 ccaaaggcta agcctgcaga agtgaagcca gctgttgatg atgaagagga tgagtctgat 480
638 tctgacggaa tggatgaaga tgattctgat ggtgaggatt ctgaggaaga agagcctaca 540
640 cctaagaagc ctgcatcaag caagaagaga gctaatgaaa ctacccctaa agcacctgtg 600
642 tcagcaaaga aggcgaaagt agcagttact cctcagaaaa cagatgagaa gaagaaaggg 660
644 ggaaaggctg caaaccagag cccaaagtcg gccagtcaag tctcatgtgg ttcatgcaag 720
646 aagactttca actcagggaa tgcacttgag tctcacaaca aggccaagca cgctgctgcc 780
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VERIFICATION SUMMARY
PATENT APPLICATION: **US/09/645,337**

DATE: 01/14/2002
TIME: 15:18:07

Input Set : **A:\104701.01 Sequence Listing.txt**
Output Set: **N:\CRF3\01112002\I645337.raw**

L:388 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:584 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4